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• Caroly, Jürgen  
74072 Heilbronn (DE)

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(74) Representative: Lederer, Franz, Dr. et al  
Lederer, Keller & Riederer  
Patentanwälte  
Prinzregentenstrasse 16  
80538 München (DE)

(71) Applicant: CPC INTERNATIONAL INC.  
Englewood Cliffs New Jersey 07632-9976 (US)

(72) Inventors:  
• Ammedick-Naumann, Claudia  
71543 Wustenrot (DE)

(54) **Seasoning mixture for the frozen food industry**

(57) A seasoning mixture for frozen food comprises a dry mixture of fat-coated seasoning salts, and further contains from about 5 to about 80% by weight of a special adhesive agent. An adhesive agent may be chosen from the group comprising native starch, yeast powder, soya powder maltodextrin and skimmed milk powder. A process for applying a flavoring component to water-containing, piece-form frozen food, wherein the frozen product is mixed dry with the seasoning mixture of the present invention.

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## Description

### FIELD OF THE INVENTION

5 The invention relates to a process for applying a flavor component to water-containing, chunky frozen food and a seasoning mixture therefor.

### BACKGROUND OF THE INVENTION

10 In the frozen food industry, the flavor component is conventionally introduced by a fat-containing mixture. The flavor component mainly comprises salts or contains such. A dry mixture having such flavor components therefore produces a thawing salt effect which leads to non-uniform application and aggregation of the piece-form frozen food.

An attempt has been made to overcome this problem by coating the dry salt component with fat. However, if sufficient fat is used to coat the salt and thus avoid the thawing salt effect, such a mixture does not adhere sufficiently to the frozen product. Peas are particularly problematic in this case, because the coated flavor component easily trickles through the frozen pea material.

Processes for coating frozen foods are frequently described in the literature. For example, Horn, U.S. Patent No. 3,656,969 discloses a process for producing a breaded vegetable product by applying a liquid batter, breading and freezing.

20 DE-A 23 55 083, corresponding to Fallon et al., U.S. Patent No. 3,868,470, relates to a process for applying seasoning sauces to frozen foods to improve their flavor. The sauce is applied in the form of a viscous suspension composed of seasoning, water, and hydrocolloid such as a pregelatinized starch.

DE-A 41 41 448 relates to a process for producing frozen ready-to-eat convenience meals, the frozen piece-form components being mixed in a rotating mixer and being coated by spraying with a heated sauce emulsion. The coating is uniformly deposited and solidly frozen onto individual components under continued rotation.

DE-C 28 30 918, corresponding to GB2 025 197, relates to a process for producing deep-frozen dishes or meals of the hot-pot or casserole type. The dish mixture comprises particles of deep-frozen, at least partially cooked, vegetables and a dry thickening agent to the vegetable particles with a liquid granulating agent.

Kametzli et al., DE-C 38 28 740 discloses a process for producing frozen convenience meals which may be portioned as desired and are covered with flavorings. Frozen piece-form foods are mixed, set into turbulence in a special apparatus, and liquid fat is first applied dropwise to the rotating product and then a previously prepared mixture of dry flavorings is added by simply being allowed to fall on the product. The individual process steps in this process must be carried out at temperatures above the freezing point. Flavorings used are a homogenized dry mix of spices and powdered cream, starch and powdered crème fraîche.

35 Each of these known processes requires a special apparatus and is not simple to carry out.

The object, therefore, underlying the present invention is to provide a seasoning mixture which does not cause a thawing salt effect but which nevertheless can be uniformly distributed in the frozen product and adheres sufficiently to it and, at the same time, has a minimal adhesion to the vessel in which the seasoning mixture is applied to the frozen food.

40 Another object of the present invention is to provide a process which does not require a special apparatus and is simple to carry out.

### SUMMARY OF THE INVENTION

45 These objects are achieved according to the invention by a seasoning mixture which comprises a dry mixture of fat-coated seasoning salts, and further contains from about 5 to about 80% by weight of a special adhesive agent. An adhesive agent may be chosen from the group comprising native starch, yeast powder, soya powder maltodextrin and skimmed milk powder. The invention also provides a process for applying a flavoring component to water-containing, piece-form frozen food, wherein said frozen product is mixed dry with the seasoning mixture of the present invention.

### DETAILED DESCRIPTION

55 The seasoning mixture according to the present invention comprises a dry mixture of seasoning salts and fats and additionally contains from about 5 to about 80% by weight, preferably from about 5 to about 50% by weight of an adhesive agent selected from the group consisting of native starch, yeast powder, soya powder, maltodextrin and skimmed milk powder.

The fat content is usually from about 2 to about 90 percent, preferably 3 to 30%, by weight. The content of seasoning salts is usually from about 5 to about 93 percent, preferably 30 to 60%, by weight.

In particular, the seasoning salts are common salt and/or glutamate, and may additionally contain considerable

amounts of spices and other flavoring components. Other usual constituents of such seasoning salts are dry products which are produced by the digestion of vegetable protein sources and contain certain amino acids. Liquid constituents can also be processed in association, as long as it is ensured that the seasoning mixture overall is dry and flowable, and preferably is in the form of powder or granules.

5 The choice of adhesive agents is of particular importance for the adhesion properties of the seasoning mixture according to the invention.

If starches are used, the starch must be a native starch which does not swell. Swelling properties must be avoided, otherwise lumping easily occurs. Therefore, the starch to be used according to the invention should also be as dry as possible for best results. The starch should have a water content below 18 percent, preferably below 10%, by weight. 10 Such starches show a good adhesion effect, to the extent that the seasoning mixture remains well adhered on the frozen material. At the same time, they show an anti-stocking effect which avoids agglomeration of the frozen product and minimizes the adhesion to the vessels. The starches used according to the invention have sufficient water absorption capacity without, however, swelling. Native starch absorbs up to 30% water without swelling. Cold-swelling starches must not be used, since they lead to lumping effects. The preferred starch is potato starch although starches from other 15 sources may also be used.

The concomitant use of fat in the seasoning mixture according to the invention is essential to prevent the thawing effect caused by the seasoning salts.

Various fats can be used for coating the seasoning salts. Hardened fats are as equally suitable as, for example, sunflower seed oil.

20 A particular advantage of the seasoning mixture according to the invention is that it may easily be mixed dry with the frozen product, without requiring a special apparatus. Uniform adhesion to the piece-form frozen product occurs without this agglomerating. The mixing is to take place at a temperature which ensures that the temperature in the material being mixed remains below the freezing temperature.

The process according to the invention is suitable particularly for processing small vegetable pieces, especially 25 peas. Peas processed according to the invention can easily be portioned, since they remain readily pourable and the flavor component is uniformly distributed on them.

The invention is described in more detail by the example below, which is not meant to be limited in any way:

#### Example

30 A seasoning mixture was prepared from the following constituents:

Common salt	50%
Monosodium glutamate	23%
Native <u>potato</u> starch (water content 6 - 18%)	10%
Hardened fat	6%
35 Sunflower seed oil	6%
Onion powder	3%
Spices	2%
	<u>100%</u>

45 The seasoning salts containing the spices were coated with the fat component and the starch was mixed in.

30 g of this seasoning mixture were mixed for one minute with 1.5 kg of frozen peas in a precooled Hobart mixer 50 having a small beating vessel for one minute. The mixing was carried out at a temperature of -20°C.

The seasoning mixture adhered well to the peas, but only slightly to the vessel.

The invention now being fully described, it will be apparent to one of ordinary skill in the art that many changes and modifications can be made thereto without departing from the spirit or scope of the invention as set forth herein.

#### 55 Claims

1. A seasoning mixture for frozen food comprising a dry mixture of seasoning salts and fat, wherein said mixture comprises from about 5 to about 80% by weight of an adhesive agent chosen from the group comprising native starch, yeast powder, soya powder, maltodextrin, and skimmed milk powder.

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2. The seasoning mixture of claim 1, wherein said mixture comprises from about 5 to about 50% by weight of said adhesive agent.
3. The seasoning mixture of claim 1, wherein said mixture comprises from about 2 to about 90% by weight of said fat.
4. The seasoning mixture of claim 3, wherein said mixture comprises from about 3 to about 30% by weight of said fat.
5. The seasoning mixture of claim 1, wherein said mixture comprises from about 5 to about 93% by weight of said seasoning salts.
6. The seasoning mixture of claim 5, wherein said mixture comprises from 30 to about 60% by weight of said seasoning salts.
7. The seasoning mixture of claim 1 wherein said seasoning salt is chosen from the group comprising common salt, glutamate, and mixtures thereof.
8. The seasoning mixture of claim 7 wherein said seasoning salt further comprises spices and other flavoring components.
9. The seasoning mixture of claim 8 wherein said seasoning salt further comprises spices and other flavoring components.
10. The seasoning mixture of claim 1 wherein said mixture is in the form of powder.
11. The seasoning mixture of claim 10 wherein said mixture is in the form of granules.
12. The seasoning mixture of claim 1 wherein said adhesive agent is a native starch having a water content below about 18% by weight.
13. The seasoning mixture of claim 12 wherein said adhesive agent is a native starch having a water content below about 10% by weight.
14. A process for applying a flavoring component to water-containing, piece-form frozen food, wherein said frozen product is mixed dry with a seasoning mixture of claim 1.
15. The process of claim 14, wherein said vegetable pieces are used as frozen food.
16. The process of claim 14, wherein said mixing is carried out at a temperature below the freezing temperature of the material being mixed.
17. A frozen food prepared by the process of claim 14.